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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Applicati n f:

Nicolaides *et al.*

Confirmation No.: 4817

Serial No.: 09/749,601

Group Art Unit: 1638

Filing Date: December 28, 2000

Examiner: D.H. Kruze

For: A METHOD FOR GENERATING HYPERMUTABLE PLANTS

Response to Requirement for Restriction

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Assistant Commissioner for Patents  
Washington D.C. 20231

Dear Sir:

This is in response to the Official Action dated October 1, 2002.

Applicants acknowledge the Requirement for Restriction and hereby traverse in part.

However, in order to be fully responsive to the Office Action, the Applicants provisionally elect Group III (Claims 1, 2, 15-21, 31-36, 46, 47, 56, 77-79, and 83-85).

The Office Action Requires restriction of several groups of claims which the Applicants earnestly submit should be rejoined as follows:

(A) Groups I-XII

Groups I-XII are drawn to methods of making hypermutable plant cells using a form of the *MutS* or *MutL* genes to disrupt mismatch repair.

The Office Action states that in the instant case, the Groups are unrelated because they are not disclosed as capable of use together and they have different modes of

operation, different functions or different effects (citing MPEP §806.04, MPEP §808.01), and because the method of any one of Groups I-XII cannot be used to produce the plant of any other group, and the plant of any one of Groups I-XII is structurally, compositionally and functionally distinct from that of any other gene.

First, the cited MPEP paragraphs reveal a far different relationship for inventions that “are not disclosed as capable of use together and they have different modes of operation, different functions or different effects (MPEP §806.04, MPEP §808.01).” MPEP §806.04 provides examples of such independent inventions. The section states that a shoe and a locomotive are examples, as are a process of painting a house and a process of boring a well. The instant set of groups are all drawn to a process for making a hypermutable plant cell using a type of mismatch repair gene (*i.e.*, a *MutS* or *MutL* gene). Certainly the rules of Patent Practice envisioned far more distinct inventions before requiring restriction under this section. In Section 808.01, the Examiner Note states that the cited paragraph is only to be used for independent inventions such as a necktie and a locomotive bearing. Moreover, Applicants earnestly submit that the claims identified in these groups are connected in design, operation, or effects. That is, the methods are designed in the same way in that a dominant negative *MutS* mismatch repair is used to generate a hypermutable plant cell. The operation is essentially the same, as are the effects. Thus, the Office Action fails to show that the claims identified in these Groups are independent in order to properly justify a Requirement for Restriction.

Furthermore, the Search classes of Groups I-XII are all Class 800, in either subclass 278 or 288. Thus, the Office Action also fails to demonstrate that consideration

of these groups in one Application would be an undue burden on the Office or that the subject matter is divergent, or has acquired a separate status in the art.

Applicants respectfully request reconsideration and withdrawal of the Requirement for Restriction as to these claims. Should the Examiner join Groups I-XII, Applicants would elect joined Groups I-XII.

**(i) In the alternative, Groups I, VII, IX and XI and Groups II-VI, VIII and X**

Should the Examiner disagree with Applicants as to joining Groups I-XII, Applicants respectfully request that the Examiner consider joining groups related to the use of forms of the *MutS* gene in the method of making hypermutable plant cells (Groups I, VII, IX and XI) in one application, and joining groups related to the use of forms of the *MutL* gene in the method of making hypermutable plant cells (Groups II-VI, VIII, and X) in another application. Should the Examiner join the groups according to the use of *MutS* or *MutL*, rather than joining Groups I-XII, the Applicants would elect joined Groups II-VI, VIII and X.

**(B) Groups XVI-XXI**

Groups XVI-XXI are drawn to methods of making hypermutable plants using *MutS* or *MutL* genes and homologs.

The Office Action states that in the instant case, these Groups are unrelated because they cannot be used together and they have different modes of operation, different functions or different effects (citing MPEP §806.04, MPEP §808.01). The Office Action also states that the transgenic plants of Groups I-XII (and sometimes stating Groups XIV) cannot be produced using the methods of any of Groups XVI-XXI.

The claims in Groups I-XII are drawn to hypermutable cells, not plants. Further, as stated above, the MPEP reveals a far different relationship for inventions that “are not disclosed as capable of use together and they have different modes of operation, different functions or different effects (MPEP §806.04, MPEP §808.01).” The rules of Patent Practice envisioned far more distinct inventions before requiring restriction under this section. Applicants earnestly submit that the claims identified in these groups are connected in design, operation, or effects. That is, the methods are designed in the same way in that a dominant negative *MutS* mismatch repair is used to generate a hypermutable plant. The operation is essentially the same, as are the effects; that is, the formation of hypermutable plants through disruption of mismatch repair. Thus, the Office Action fails to show that the claims identified in these Groups are independent in order to properly justify a Requirement for Restriction.

Furthermore, the Search classes of Groups XVI-XXI are all Class 800, in either subclass 278 or 288. Thus, the Office Action also fails to demonstrate that consideration of these groups in one Application would be an undue burden on the Office or that the subject matter is divergent, or has acquired a separate status in the art.

Applicants respectfully request reconsideration and withdrawal of the Requirement for Restriction as to these claims.

**(C) Groups XIII-XIV**

Groups XIII and XIV are drawn to hypermutable transgenic plants. The arguments presented above traversing the cited sections of the MPEP apply here as well. Further, Groups XIII and XIV are both in Class 800, in subclass 298. Thus, the Office Action also fails to demonstrate that consideration of these groups in one Application

would be an undue burden on the Office or that the subject matter is divergent, or has acquired a separate status in the art. Applicants respectfully request withdrawal of the Requirement for Restriction and rejoinder of Groups XIII and XIV.

**(D) Groups XXII-XXV**

Each of Groups XXII-XXV encompasses claims drawn to PMS2 sequences and vectors containing these sequences. The PMS2 sequences include both wild-type and truncation mutant PMS2 sequences, and are not unrelated as described in the MPEP §806.04 and MPEP §808.01 (argued above). Furthermore, both Groups comprise claims that are classified in Class 435, subclass 320.1 or Class 536, subclass 23.6. It would not be an undue burden on the Office to search these Groups in a single application. Applicants respectfully request withdrawal of the Requirement for Restriction and rejoinder of Groups XXII-XXV.

In the alternative, Applicants request reconsideration and rejoinder of Groups XXII and XXIII (Class 435, subclass 320.1) in one group, and Groups XXIV and XXV (Class 536, subclass 23.6) in another group.

**(E) Groups XXVI and XXVII**

Groups XXVI and XXVII are drawn to plant PMS2 proteins. Both sequences are related, and are simply an amino acid sequence of the wild-type protein and a shortened, truncation mutant, and are not unrelated as described in the MPEP §806.04 and MPEP §808.01 (argued above). Furthermore, both Groups comprise claims that are classified in Class 530, subclass 370. It would not be an undue burden on the Office to search these Groups in a single application. Applicants respectfully request withdrawal of the

Requirement for Restriction of Groups XXVI and XXVII and request their rejoinder in a single group.

Applicants respectfully request that the examiner reconsider the Requirement for Restriction and rejoin the groups as indicated above.

Respectfully submitted,

By:



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November 27, 2002

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